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United States Department of Agriculture

Federal Grain Inspection Service

April 1986

U.S. Export Soybean Quality, 1985

Second Calendar Year Report

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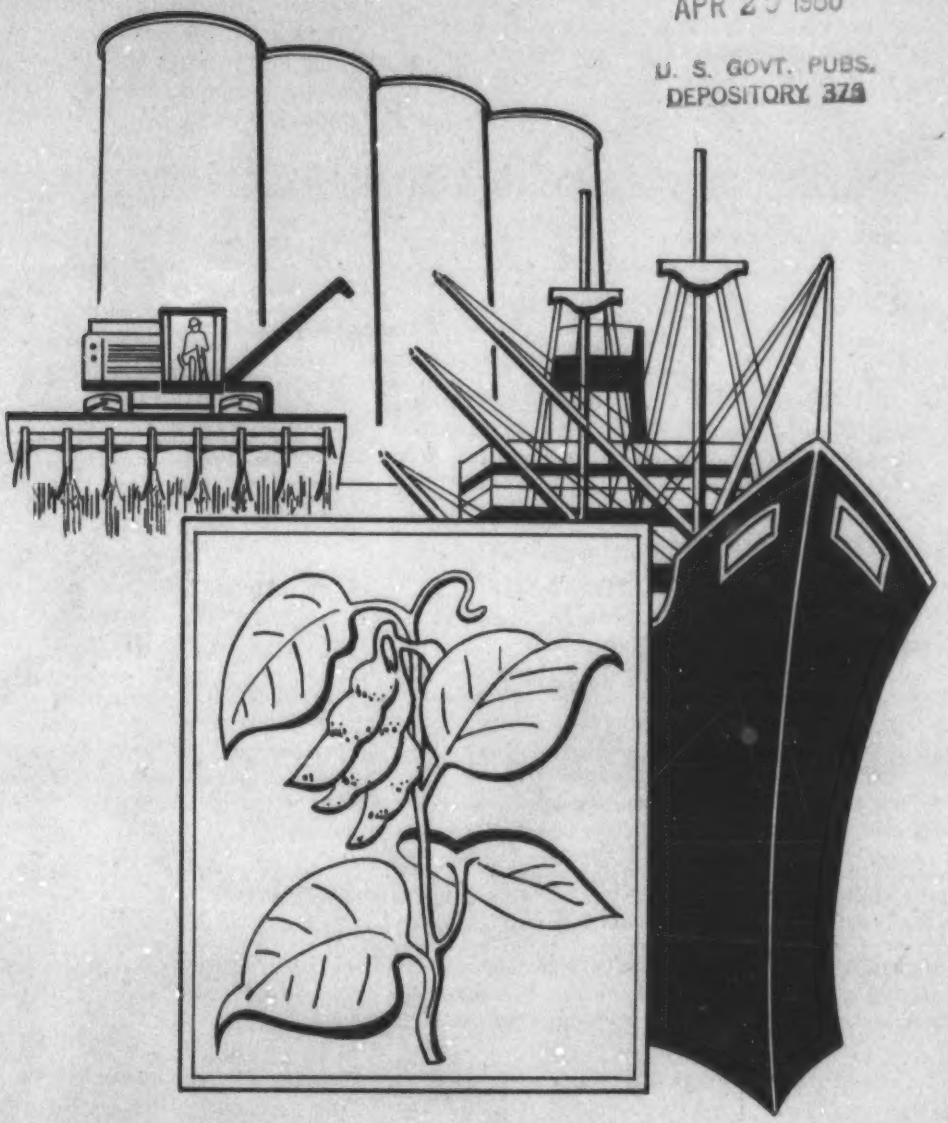

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READEX FICHE

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Second Calendar Year Report

Soybean Grades and Grade Requirements

There are two classes of soybeans: Yellow soybeans and Mixed soybeans. There are no soybean subclasses. Yellow soybeans is the class most commonly exported by the U.S. market. Each class is divided into four U.S. numerical grades and U.S. Sample grade. Special grades are provided to emphasize special qualities or conditions affecting the value of the soybeans. These special grades are a part of the grade designation but do not affect the numerical or Sample grade designation.

U.S. Standards for Soybeans*

Grade	Minimum Test weight per bushel (pounds)	Maximum limits of —				
		Damaged kernels				
		Splits	Total	Heat damaged (percent)	Foreign material	*Soybeans of other colors
US. No. 1	56.0	10.0	2.0	0.2	1.0	1.0
U.S. No. 2	54.0	20.0	3.0	0.5	2.0	2.0
U.S. No. 3[1]	52.0	30.0	5.0	1.0	3.0	5.0
U.S. No. 4[2]	49.0	40.0	8.0	3.0	5.0	10.0

U.S. Sample grade:

U.S. sample grade shall be soybeans which —

(a) Do not meet the requirements for U.S. Nos. 1, 2, 3, or 4; or

(b) Contain 8 or more stones which have an aggregate weight in excess of 0.2 percent of the sample weight, 2 or more pieces of broken glass, 3 or more Crotalaria seeds, 2 or more castor beans, 4 or more pieces of an unknown substance(s) or a commonly recognized harmful or toxic substance(s), 10 or more pieces of rodent pellets, bird droppings, or an equivalent quantity of other animal filth per 1,000 grams of soybeans; or

(c) Has a musty, sour, or commercially objectionable foreign odor (except garlic odor); or

(d) Are heating or otherwise of distinctly low quality.

[1] Soybeans which are purple mottled or stained shall be graded not higher than U.S. No. 3.

[2] Soybeans which are materially weathered shall be graded not higher than U.S. No. 4.

* As of September 9, 1985, moisture is no longer a grading factor for soybeans, although it is required to be shown on the certificate. Also, on the same date the factor "brown, black, and/or bicolored soybeans in Yellow or Green soybeans" was changed to "soybeans of other colors." In Mixed soybeans, the factor is disregarded.

For definitions of grading factors and other terms, refer to page 7.

For more information, contact the Administrative and Program Services Branch, Resources Management Division, Federal Grain Inspection Service,U.S. Department of Agriculture, Washington, D.C. 20250; telephone (202) 382-1741. For additional copies of this report, call (202) 475-3367.

Soybeans

Background

There has been a growing industry-wide concern regarding the quality of U.S. grain exports in the past few years. To truly ascertain U.S. grain export quality, the U.S. Department of Agriculture's Federal Grain Inspection Service began analyzing export grain data. The first comprehensive report was for calendar year 1984. In this 1985 study, 580 export Yellow soybean lots were analyzed. The data represented 86 percent of the total 617 million bushels inspected for export during calendar year 1985. No analysis was made of the 3 percent exports from the interior by truck or rail.

For comparison purposes, 1984 export soybean quality results have been included, and FGIS has broken down the grade factor averages for No. 1, No. 2, and No. 3. Further, a comparison by port region of grading factors for 1984 and 1985 is shown for No. 2 and No. 3 soybeans.

Soybeans represented 17 percent of the total 3.55 billion buahels of grain inspected for export in 1985. Soybean shipments from the Gulf of Mexico accounted for 79 percent of the total soybean exports.

Conclusions

1. Eighty-seven percent of the export shipments were graded U.S. No. 2 or better, and 12 percent were U.S. No. 3. In 1984, 89 percent of the shipments were graded U.S. No. 2 or better, and 10 percent were U.S. No. 3.
2. Although 1985 quality in terms of splits improved over 1984 with a reduction on average (−1.5), test weight fell (−0.2 pound), moisture rose (+0.4 percent), total damaged kernels increased (+0.5 percent), and heat-damaged kernels went up (+0.1 percent).
3. There was little or no difference in a comparison between 1985 and 1984 average soybean foreign material and soybeans of other colors.
4. In 1985, the Gulf exhibited the biggest increase in damaged kernels (total), whereas the Lakes demonstrated the biggest decline in test weight per bushel and increase in moisture.

Table 1. Summary of Export Yellow Soybeans Quality, 1984 and 1985

Factor	Grade	Grade Limit	1984[1] Average	1985[1] Average	1985 Range
Test weight per bushel	U.S. No. 1	56.0	56.1	56.4	56.0 - 57.0
	U.S. No. 2	54.0	55.7	55.4	54.0 - 57.9
	U.S. No. 3	52.0	55.4	55.1	52.5 - 57.9
	All Lots		55.6	55.4	52.0 - 57.9
Moisture	U.S. No. 1	13.0	12.4	12.3	11.0 - 13.4
	U.S. No. 2	14.0	12.6	13.0	11.2 - 14.0
	U.S. No. 3	16.0	12.8	13.2	11.6 - 14.0
	All Lots		12.6	13.0	11.0 - 14.0
Splits	U.S. No. 1	10.0	5.3	3.7	0.0 - 9.0
	U.S. No. 2	20.0	7.3	5.9	0.4 - 18.0
	U.S. No. 3	30.0	7.8	6.7	0.5 - 16.0
	All Lots		7.4	5.9	0.0 - 18.0
Damaged kernels (total)	U.S. No. 1	2.0	0.6	0.5	0.1 - 0.9
	U.S. No. 2	3.0	1.0	1.5	0.2 - 3.0
	U.S. No. 3	5.0	1.1	1.7	0.4 - 4.0
	All Lots		1.0	1.5	0.1 - 7.6
Heat-damaged kernels	U.S. No. 1	0.2	0.0	0.0	0.0 - 0.0
	U.S. No. 2	0.5	0.0	0.1	0.0 - 0.4
	U.S. No. 3	1.0	0.0	0.0	0.0 - 0.5
	All Lots		0.0	0.1	0.0 - 0.5
Foreign material	U.S. No. 1	1.0	0.8	0.8	0.0 - 1.0
	U.S. No. 2	2.0	1.8	1.8	0.7 - 2.0
	U.S. No. 3	3.0	2.4	2.4	1.3 - 3.0
	All Lots		1.9	1.9	0.0 - 3.5
Soybeans of other colors	U.S. No. 1	1.0	0.0	0.0	0.0 - 0.0
	U.S. No. 2	2.0	0.0	0.0	0.0 - 0.1
	U.S. No. 3	5.0	0.0	0.0	0.0 - 0.1
	All Lots		0.0	0.0	0.0 - 0.1

[1] 1984 statistics based on a total of 653 lots: 9 for U.S. No. 1, 574 for U.S. No. 2, 64 for U.S. No. 3, 4 for U.S. No. 4, and 2 for U.S. Sample grade.

[2] 1985 statistics are based on a total of 580 lots: 16 for U.S. No. 1, 490 for U.S. No. 2, 68 for U.S. No. 3, 5 for U.S. No. 4, and 1 for U.S. Sample grade.

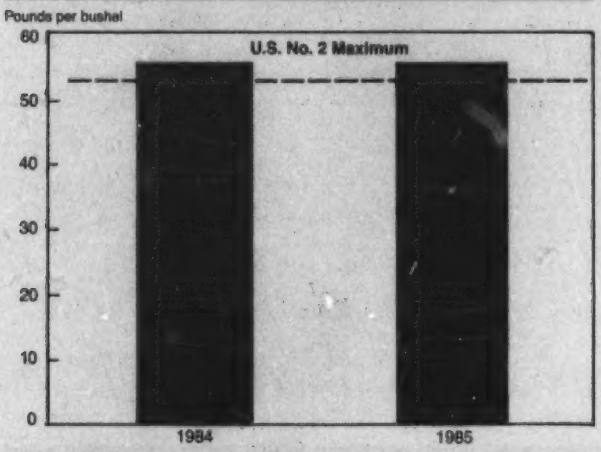
Table 2. Summary of Export U.S. No. 2 Yellow Soybean Quality, 1984 and 1985
Factor Averages by Port Region

	Atlantic		Gulf		Lakes		Pacific		U.S.	
Factor and Volume	1984	1985	1984	1985	1984	1985	1984	1985	1984	1985
Million bushels	35	44	448	366	34	26	25	17	542	453
Test weight per bushel	56.6	56.1	55.5	55.2	56.6	55.2	55.5	56.0	55.7	55.4
Moisture	13.0	13.5	12.6	12.9	13.0	13.6	11.7	12.0	12.6	13.0
Splits	6.3	4.4	7.4	6.1	5.2	2.7	10.7	8.4	7.3	5.9
Damaged kernels (total)	0.7	1.0	1.1	1.6	0.4	0.4	0.8	0.6	1.0	1.5
Heat damaged	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.1
Foreign material	1.8	1.7	1.8	1.8	1.7	1.7	1.8	1.7	1.8	1.8
Soybeans of other colors	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

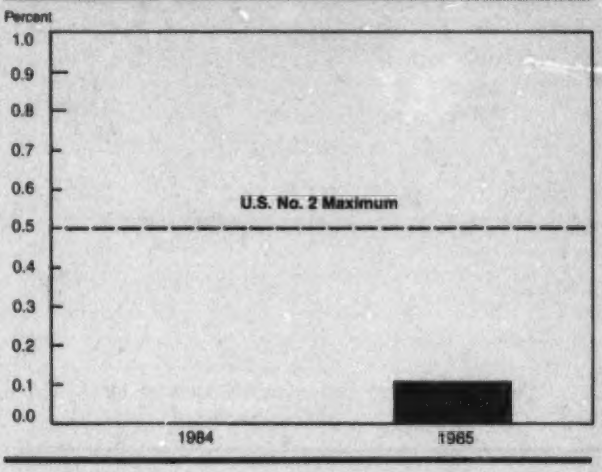
Table 3. Summary of Export U.S. No. 3 Yellow Soybean Quality, 1984 and 1985
Factor Averages by Port Region

Factor and Volume	Atlantic		Gulf		Lakes		Pacific		U.S.	
	1984	1985	1984	1985	1984	1985	1984	1985	1984	1985
Million bushels	2	4	57	62	2	1	—	—	61	65
Test weight per bushel	56.6	56.4	55.3	55.0	56.9	56.0	—	—	55.4	55.1
Moisture	13.2	13.7	12.7	13.2	13.2	13.9	—	—	12.8	13.2
Splits	7.2	8.4	7.9	6.6	6.5	7.0	—	—	7.8	6.7
Damaged kernels (total)	0.7	0.8	1.2	1.7	0.4	0.4	—	—	1.1	1.7
Heat damaged	0.0	0.0	0.0	0.1	0.1	0.0	—	—	0.0	0.1
Foreign material	2.7	2.7	2.4	2.4	2.3	2.0	—	—	2.4	2.4
Soybeans of other colors	0.0	0.0	0.0	0.0	0.0	0.0	—	—	0.0	0.0

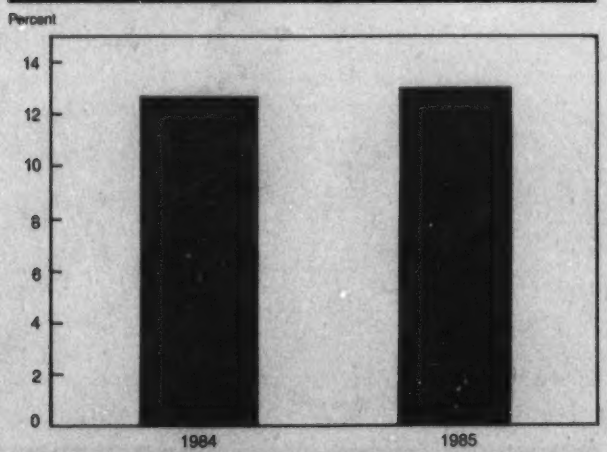
Soybeans — Average Test Weight
1984 —vs— 1985



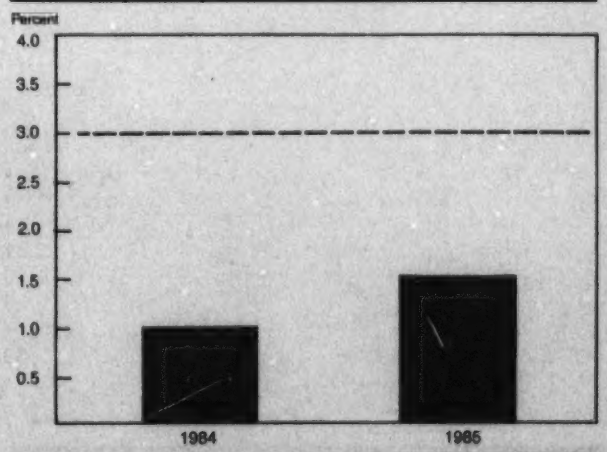
Soybeans — Average Heat Damage
1984 —vs— 1985



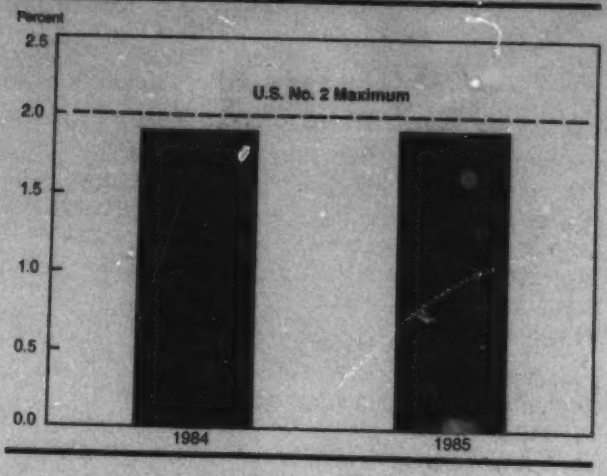
Soybeans — Average Moisture
1984 —vs— 1985



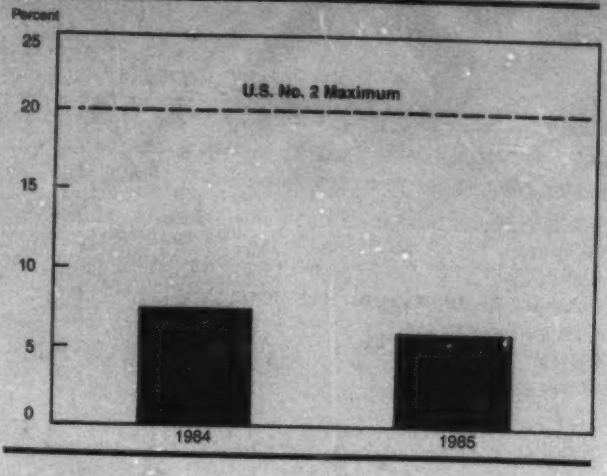
Soybeans — Average Damaged Kernels Total
1984 —vs— 1985



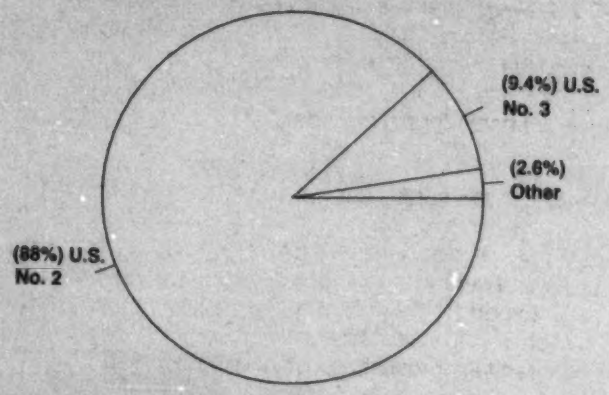
Soybeans — Average Foreign Material
1984 —vs— 1985



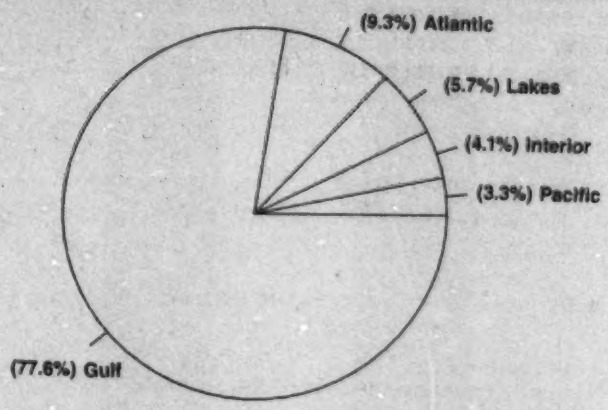
Soybeans — Average Splits
1984 —vs— 1985



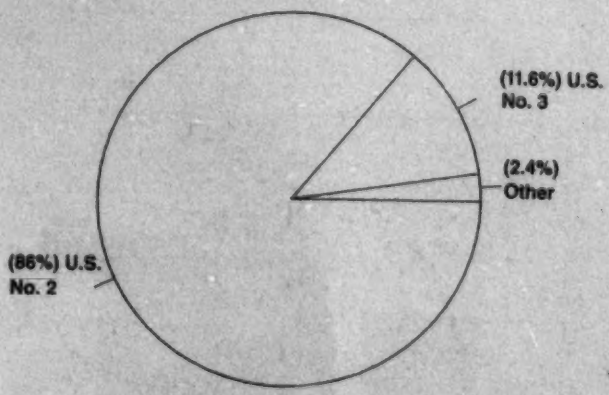
1984 Soybean Exports
Grade Distribution



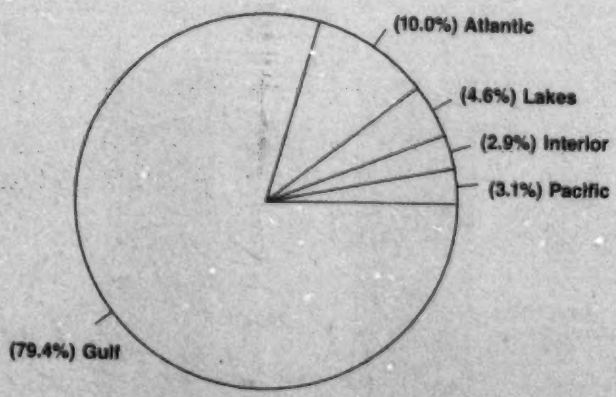
Soybean Exports by Region — 1984



1985 Soybean Exports
Grade Distribution



Soybean Exports by Region — 1985



Definitions

- **Test weight per bushel** is a determination of the number of pounds of soybeans in a Winchester bushel.

- **Moisture** is the water content of grain as determined by an approved electronic moisture meter. Effective September 9, 1985, the percentage of moisture in a sample does not affect the numerical grade.

- **Splits** are soybeans with more than one-fourth of the bean removed and which are not damaged.

- **Damaged kernels** are soybeans and pieces of soybeans which are badly ground-damaged, badly weather-damaged, diseased, frost-damaged, heat-damaged, insect-bored, mold-damaged, sprout-damaged, insect-bored, mold-damaged, sprout-damaged, stinkbug-stung, or otherwise materially damaged.

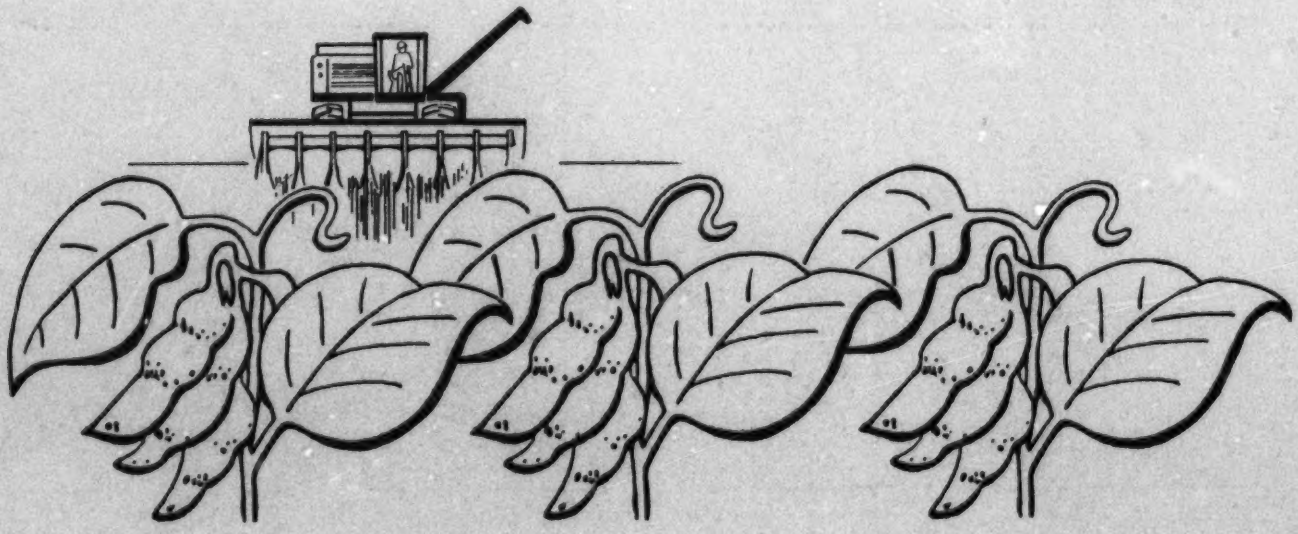
- **Heat-damaged kernels** are soybeans and pieces of soybeans which are materially discolored and damaged by heat.

- **Foreign material** is all matter, including soybeans and pieces of soybeans, which will readily pass through an 8/64 inch sieve and all matter other than soybeans remaining on the sieve after sieving.

- **Soybeans of other colors** are soybeans which have green, black, brown, or bicolored seed coats. Before September 9, 1985, this factor was called "brown, black, and/or bicolored soybeans in yellow or green soybeans."

- **Grade** is determined by analyzing the physical and biological factors present in the sample. Limits for the grading factors are established for each numerical and Sample grade. Grades range from U.S. No. 1 (highest) to U.S. Sample grade (lowest). When a particular grade is cited in this report, it includes lots certificated at that grade plus lots certificated with the "or better" designation. For example, U.S. No. 2 includes lots certificated as "U.S. No. 2" and lots certificated as "U.S. No. 2 or better." Factors that exceed the established limits lower the numerical grade, except for test weight where established limits represent minimum requirements for each grade.

- **Note:** All 1984 and 1985 average factor values contained in this report have been calculated by weighting individual export lot factor averages by volume. Average factor values reported in the 1984 U.S. Export Soybean Quality report were not weighted by volume. This fact accounts for some differences between factor results reported in that report and 1984 factor results included in this report.



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